

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

| | |
|--|--|
| Date of mailing (day/month/year) 15 February 2001 (15.02.01) | |
| International application No. PCT/EP00/05192 | Applicant's or agent's file reference UG-002-PCT |
| International filing date (day/month/year) 06 June 2000 (06.06.00) | Priority date (day/month/year) 07 June 1999 (07.06.99) |
| Applicant DECUYPERE, Jaak et al | |

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
27 December 2000 (27.12.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

| | |
|--|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38 |
|--|--|

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

BRANTS, Johan, Philippe, Emile
De Clercq, Brants & Partners cv
E. Gevaertdreef 10 a
B-9830 Sint-Martens-Latem
BELGIQUE

Date of mailing (day/month/year)

14 December 2001 (14.12.01)

Applicant's or agent's file reference

UG-002-PCT

IMPORTANT NOTIFICATION

International application No.

PCT/EP00/05192

International filing date (day/month/year)

06 June 2000 (06.06.00)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address

KEMIN EUROPE N.V.
Industriezone Wolfstee
B-2200 Herentals
Belgium

State of Nationality

BE

State of Residence

BE

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

State of Nationality

State of Residence

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

Deletion of applicant due to assignment of rights.

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned
☐ the International Searching Authority ☒ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Anman QIU

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BRANTS, Johan, Philippe, Emile
De Clercq, Brants & Partners cv
E. Gevaertdreef 10 a
B-9830 Sint-Martens-Latem
BELGIQUE

| | |
|--|--|
| Date of mailing (day/month/year) 13 December 2001 (13.12.01) | |
| Applicant's or agent's file reference UG-002-PCT | IMPORTANT NOTIFICATION |
| International application No. PCT/EP00/05192 | International filing date (day/month/year) 06 June 2000 (06.06.00) |

| | | |
|--|-----------------------------------|---------------------------------|
| 1. The following indications appeared on record concerning: <input checked="" type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative | | |
| Name and Address UNIVERSITEIT GENT Sint-Peetersnieuwstraat 25 B-9000 Gent Belgium | State of Nationality BE | State of Residence BE |
| Telephone No. | | |
| Facsimile No. | | |
| Teleprinter No. | | |
| 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input checked="" type="checkbox"/> the person <input type="checkbox"/> the name <input type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence | | |
| Name and Address | State of Nationality | State of Residence |
| Telephone No. | | |
| Facsimile No. | | |
| Teleprinter No. | | |
| 3. Further observations, if necessary: Deletion of applicant due to assignment of rights. | | |
| 4. A copy of this notification has been sent to: <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the International Searching Authority <input type="checkbox"/> the International Preliminary Examining Authority </div> <div> <input type="checkbox"/> the designated Offices concerned <input checked="" type="checkbox"/> the elected Offices concerned <input type="checkbox"/> other: </div> </div> | | |

| | |
|--|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer Anman QIU Telephone No.: (41-22) 338.83.38 |
|--|--|

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 December 2000 (14.12.2000)

PCT

(10) International Publication Number
WO 00/74497 A1

- (51) International Patent Classification⁷: **A23K 1/16**, 1/18, A61K 31/23, 38/46, A61P 1/00
- (74) Agent: **BRANTS, Johan, Philippe, Emile**; De Clercq, Brants & Partners cv, E. Gevaertdreef 10 a, B-9830 Sint-Martens-Latem (BE).
- (21) International Application Number: **PCT/EP00/05192**
- (22) International Filing Date: **6 June 2000 (06.06.2000)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
99870120.5 **7 June 1999 (07.06.1999)** **EP**
- (71) Applicants (for all designated States except US): **UNIVERSITEIT GENT** [BE/BE]; Sint-Petersnieuwstraat 25, B-9000 Gent (BE). **AVEVE N.V.** [BE/BE]; Eugeen Meeusstraat 6, B-2170 Merksem (BE). **KEMIN EUROPE N.V.** [BE/BE]; Industriezone Wolfstee, B-2200 Herentals (BE). **VITAMEX N.V.** [BE/BE]; Booiebos 5, B-9031 Drongen (BE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DECUYPERE, Jaak** [BE/BE]; Brugsesteenweg 162, B-8520 Kuurne (BE). **DIERICK, Noël** [BE/BE]; Rostynedreef 19, B-9880 Aalter (BE).
- Published:
— With international search report.
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 00/74497 A1

(54) Title: **THE COMBINED USE OF TRIGLYCERIDES CONTAINING MEDIUM CHAIN FATTY ACIDS AND EXOGENOUS LIPOLYTIC ENZYMES AS FEED SUPPLEMENTS**

(57) Abstract: The present invention relates to the use of triglycerides (TG) containing medium chain fatty acids (C4 to C12), combined with exogenous lipolytic enzymes (esterases or lipases) as a feed supplement for animals in order to prevent and/or alleviate the problems which are frequently met at this moment. This results in a marked improvement of the growth performances without the use of the classical, but contested, feed additives.

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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|--|--|---|
| Applicant's or agent's file reference UG-002-PCT | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No. PCT/EP00/05192 | International filing date (day/month/year) 06/06/2000 | Priority date (day/month/year) 07/06/1999 |
| International Patent Classification (IPC) or national classification and IPC A23K1/16 | | |
| Applicant UNIVERSITEIT GENT et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 8 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

| | |
|---|--|
| Date of submission of the demand 27/12/2000 | Date of completion of this report 30.08.2001 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized officer Georgopoulos, N Telephone No. +49 89 2399 2634  |

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP00/05192

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-26 as originally filed

Claims, No.:

1-19 as received on 11/07/2001 with letter of 10/07/2001

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/05192

☐ the drawings, sheets:

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

see separate sheet

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 15.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 15 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 5, 7-8, 10-11, 13

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP00/05192

| | | | |
|-------------------------------|------|--------|-------------------|
| | No: | Claims | 1-4, 6, 9, 12, 14 |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 1-14 |
| Industrial applicability (IA) | Yes: | Claims | 1-14 |
| | No: | Claims | |

2. Citations and explanations
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Item I

- 1 The amendments filed with the letter of 10.07.01 do not fulfil the requirements of Art.34 (2) (b) PCT, as they go beyond the disclosure in the international application as filed. The amendments concerned are the following:
 - 1.1 The omission of the word "feed" before the word "composition" in present independent claims 1 to 3

The description as originally filed discloses only a "feed supplement composition" (see page 5, lines 13 to 15 and page 6, lines 18 to 22 thereof) and the originally filed set of claims discloses only a "feed composition" (see originally filed claims 1, 10 and 11). Thus, said amendment leads to the broadening of the invention's scope as originally filed.
 - 1.2 The aforementioned remark applies *mutatis mutandis* for present dependent claims 4 to 14 as well as for present independent claims 15 to 17.
 - 1.3 The insertion of the word "in" before the term "a feed supplement" in present independent claim 17

Only the description as originally filed discloses (see page 8, lines 7 to 9 thereof) that "the inventors had the original idea to use a combination of a TG, containing sufficient MCFA, together with a lipolytic enzyme as a feed supplement" (and not the "*use of a composition ... in a feed supplement or feed composition*" as claimed in present claim 17). Therefore, said amendment leads to a specific disclosure not contained in the originally filed documents.
 - 1.4 Thus, the examination will be carried out on the basis of the originally filed application documents.

Item III

- 2 Present claim 15 is so unclear (Art.6 PCT) that no meaningful examination can be carried out, due to the fact that present claim 15 is a "use" claim and refers back to claim 14 which is a "composition" claim.

Item V

- 3 Reference is made to the following documents:

D1: PATENT ABSTRACTS OF JAPAN vol. 012, no. 181 (C-499), 27 May 1988 (1988-05-27) -& JP 62 289152 A (ZENKOKU NOGYO KYODO KUMIAI RENGOKAI;OTHERS: 01), 16 December 1987 (1987-12-16)

D2: GB-A-1 442 093

D3: DATABASE WPI Section Ch, Week 197932 Derwent Publications Ltd., London, GB; Class D13, AN 1979-58803B XP002123153 -& JP 54 080462 A (NIPPON OILS & FATS CO LTD), 27 June 1979 (1979-06-27)

D4: US-A-3 477 853

D5: EP-A-0 429 879

- 3.1 The subject-matter of present independent claim 1 is not new (Art.33 (2) PCT).
- 3.2 D1 discloses a piglet feed comprising milk fat and a lipase. D2 (see page 4, lines 17 to 44, Example I of D2) discloses an animal food comprising beef tallow and Takamine® (pancreatic lipase). D3 brings to light a composition comprising skimmed milk solids, oil, fat and water, wherein the resulting mixture is decomposed with lipase, protease and / or lactase. D4 discloses a sweet buttermilk composition in which dry non-fat milk solids having a total solids content of 21.6 pounds and a butter fat content of 0.22 pounds, 2.85 pounds of a 50% butter fat cream lipolyzed with ITALASE C and 0.35 grams of Tenox-2 are dispersed into 25.65 pounds of water (see column 3, line 75 to column 4, line 32, example I of D4).
- 3.3 Thus, the subject-matter of present independent claim 1 is anticipated by any of the documents D1 to D4.
- 4 The subject-matter of present independent claim 1 does not involve an inventive step (Art.33 (3) PCT), for the following reasons:
- 4.1 D5 is considered to represent the closest prior art document. The technical problem to be solved by the present invention may, therefore, be regarded as how to provide an alternative to the feed composition of D5, wherein said composition when given to animals (especially early weaned pigs) on a daily basis can bring about:

i/ a significant suppression of the bacteriological load in their stomach and upper small intestine; and

ii/ a marked improvement of their growth (see page 3, line 23 to page 4, line 10 and examples 2 and 3 of the present description as well as column 1, lines 40 to 49 of D5).

The difference between present invention's composition and that of D5 resides in the fact that the former comprises triglyceride(s) containing medium chain fatty acids whereas the latter contains vegetable oil(s) (see column 4, lines 14 to 19 and claim 1 of D5).

However, any one of D1 to D4 discloses the above-mentioned triglycerides (see also point 2.2 of the present opinion). Hence, there are indications in the technical teaching of any of the documents D1 to D4 that would prompt the person skilled in the art to start from the composition of D5, modify it and arrive at the claimed composition.

Consequently, the subject-matter of present independent claim 1 would be obvious to the person skilled in the art with respect to the combination of D5 with any of D1 to D4.

- 5 The subject-matter of claims 1 to 14 is susceptible of industrial application in the field of feed and / or animal pharmaceuticals industry (Art.33 (4) PCT).

Item VIII

- 6 The vague and imprecise statement in the description on page 8, lines 19 to 20 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, III - 4.3a).
- 7 The word "about" in present claim 9 renders said claim unclear (Art.6 PCT). The applicant is requested to delete this word in said claim as well as in the respective part of the present description (so that the amended claim can be fully supported by the description).
- 8 In present claim 9, the triglyceride component concentration ranges of 0.05-0.25% and 10-20% as well as the lipolytic enzyme component concentration ranges of 5-

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP00/05192

100 ppm are not supported by the present description (see page 6, lines 14 to 17).
Therefore, said claim is not fully supported by the description as required in Art.6
PCT.

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|--|---|--|
| Applicant's or agent's file reference UG-002-PCT | FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. | |
| International application No. PCT/EP 00/ 05192 | International filing date (day/month/year) 06/06/2000 | (Earliest) Priority Date (day/month/year) 07/06/1999 |
| Applicant UNIVERSITEIT GENT | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.